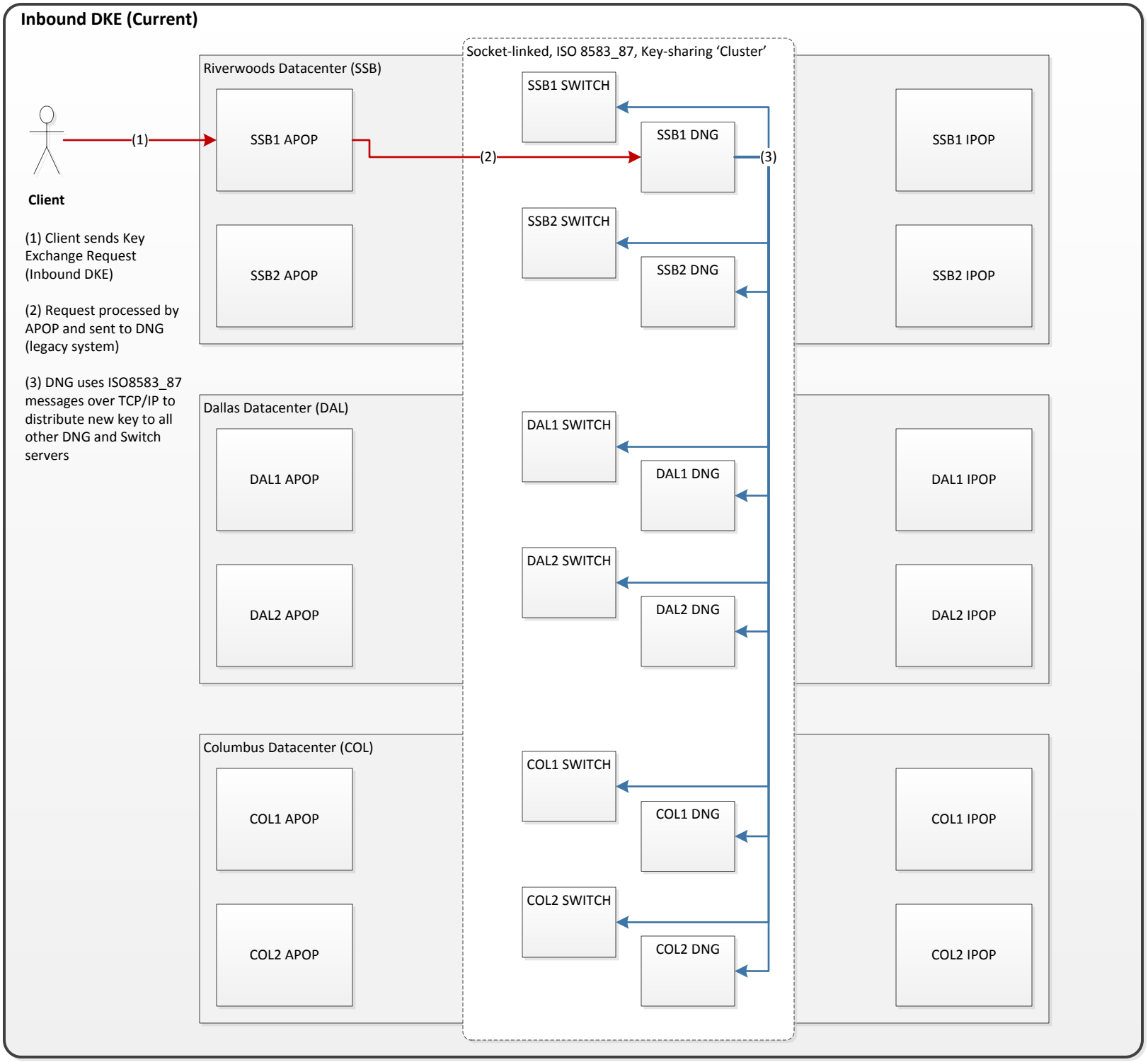
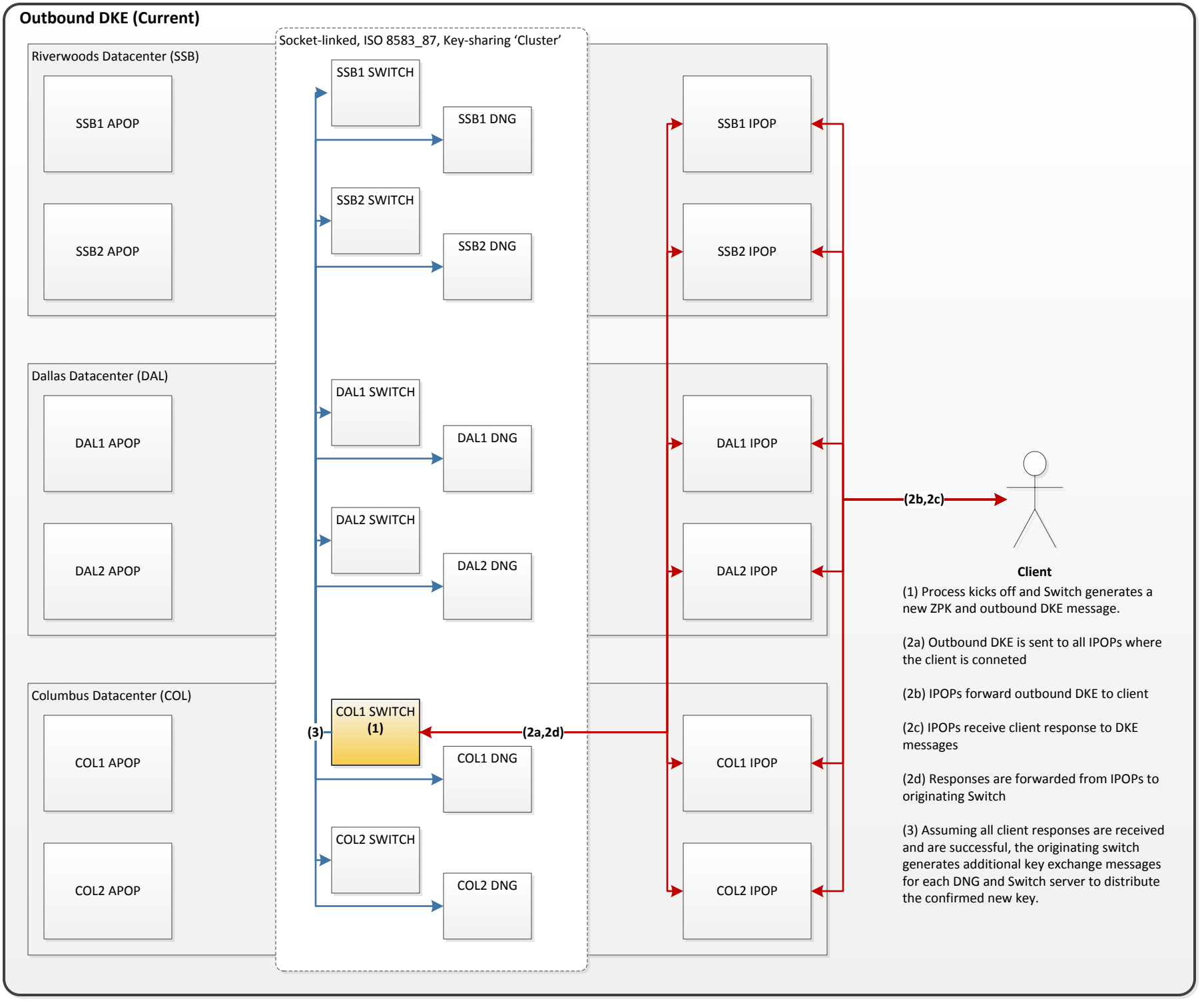
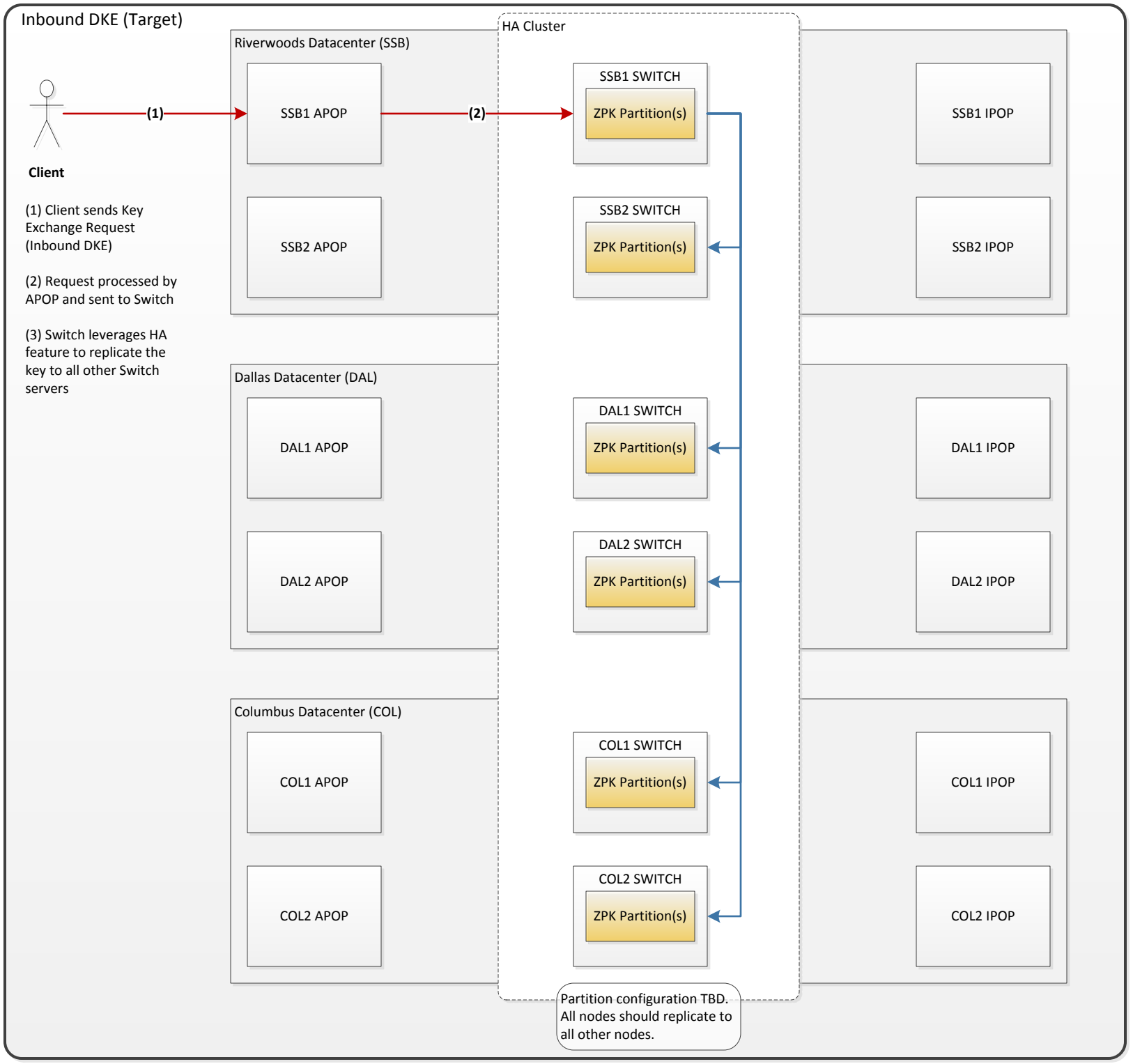
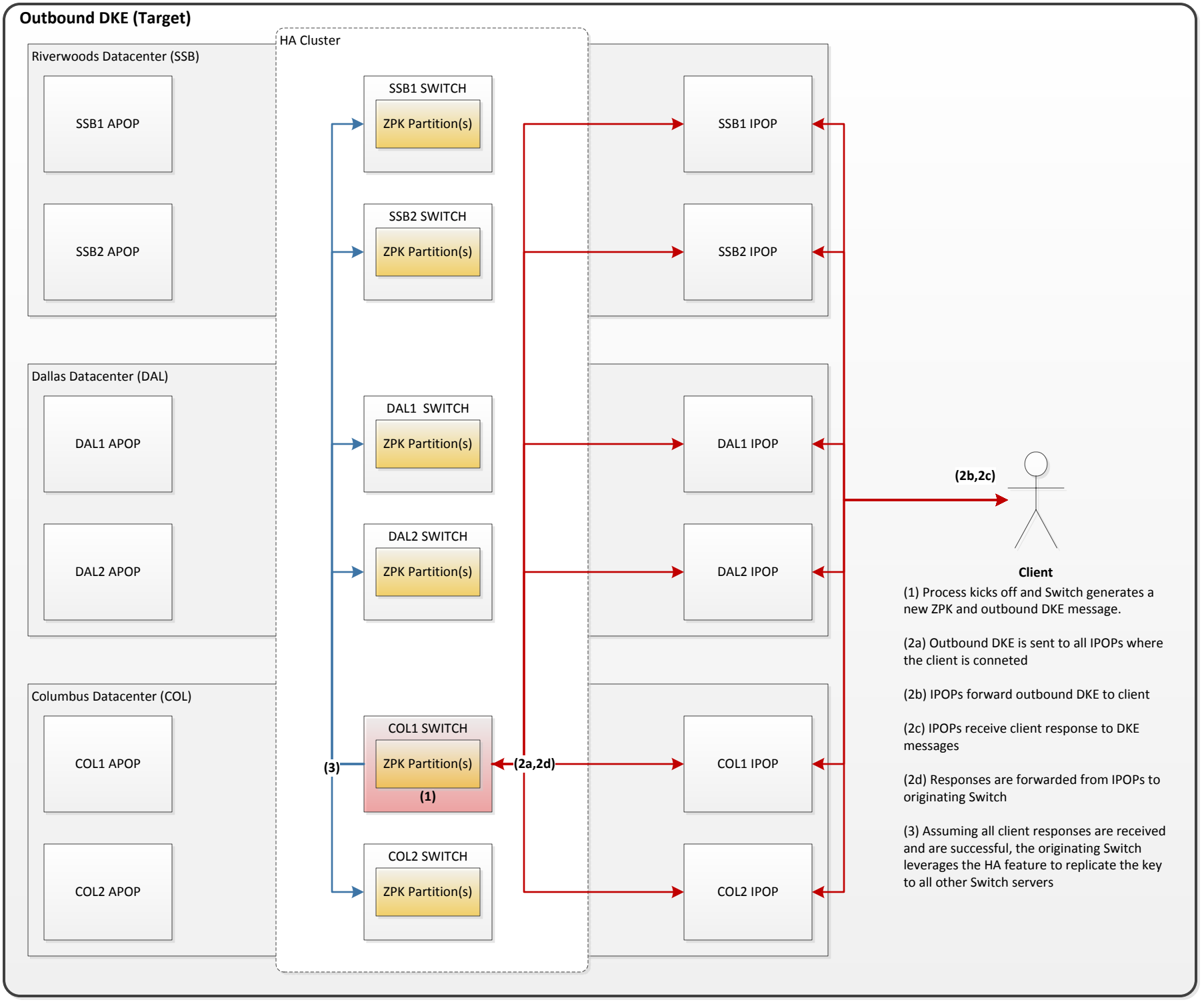

Inbound DKE (Current)
Socket-linked, ISO 8583_87, Key-sharing 'Cluster'
Riverwoods Datacenter (SSB)
SSB1 APOP
SSB2 APOP
SSB1 SWITCH
SSB1 DNG
SSB2 SWITCH
SSB2 DNG
SSB1 IPOP
SSB2 IPOP
Client
(1)
(2)
(3)
(1) Client sends Key Exchange Request (Inbound DKE)
(2) Request processed by APOP and sent to DNG (legacy system)
(3) DNG uses ISO8583_87 messages over TCP/IP to distribute new key to all other DNG and Switch servers
Dallas Datacenter (DAL)
DAL1 APOP
DAL2 APOP
DAL1 SWITCH
DAL1 DNG
DAL2 SWITCH
DAL2 DNG
DAL1 IPOP
DAL2 IPOP
Columbus Datacenter (COL)
COL1 APOP
COL2 APOP
COL1 SWITCH
COL1 DNG
COL2 SWITCH
COL2 DNG
COL1 IPOP
COL2 IPOP


Outbound DKE (Current)
Socket-linked, ISO 8583_87, Key-sharing 'Cluster'
Riverwoods Datacenter (SSB)
SSB1 APOP
SSB2 APOP
SSB1 SWITCH
SSB2 SWITCH
SSB1 DNG
SSB2 DNG
SSB1 IPOP
SSB2 IPOP
Dallas Datacenter (DAL)
DAL1 APOP
DAL2 APOP
DAL1 SWITCH
DAL2 SWITCH
DAL1 DNG
DAL2 DNG
DAL1 IPOP
DAL2 IPOP
Columbus Datacenter (COL)
COL1 APOP
COL2 APOP
COL1 SWITCH
(1)
COL2 SWITCH
COL1 DNG
COL2 DNG
COL1 IPOP
COL2 IPOP
(3)
(2a,2d)
(2b,2c)
Client
(1) Process kicks off and Switch generates a new ZPK and outbound DKE message.
(2a) Outbound DKE is sent to all IPOPs where the client is conneted
(2b) IPOPs forward outbound DKE to client
(2c) IPOPs receive client response to DKE messages
(2d) Responses are forwarded from IPOPs to originating Switch
(3) Assuming all client responses are received and are successful, the originating switch generates additional key exchange messages for each DNG and Switch server to distribute the confirmed new key.


Inbound DKE (Target)
HA Cluster
Riverwoods Datacenter (SSB)
Client
(1)
SSB1 APOP
(2)
SSB1 SWITCH
ZPK Partition(s)
SSB1 IPOP
SSB2 APOP
SSB2 SWITCH
ZPK Partition(s)
SSB2 IPOP
(1) Client sends Key Exchange Request (Inbound DKE)
(2) Request processed by APOP and sent to Switch
(3) Switch leverages HA feature to replicate the key to all other Switch servers
Dallas Datacenter (DAL)
DAL1 APOP
DAL1 SWITCH
ZPK Partition(s)
DAL1 IPOP
DAL2 APOP
DAL2 SWITCH
ZPK Partition(s)
DAL2 IPOP
Columbus Datacenter (COL)
COL1 APOP
COL1 SWITCH
ZPK Partition(s)
COL1 IPOP
COL2 APOP
COL2 SWITCH
ZPK Partition(s)
COL2 IPOP
Partition configuration TBD.
All nodes should replicate to all other nodes.


Outbound DKE (Target)
HA Cluster
Riverwoods Datacenter (SSB)
SSB1 APOP
SSB2 APOP
SSB1 SWITCH
ZPK Partition(s)
SSB2 SWITCH
ZPK Partition(s)
SSB1 IPOP
SSB2 IPOP
Dallas Datacenter (DAL)
DAL1 APOP
DAL2 APOP
DAL1 SWITCH
ZPK Partition(s)
DAL2 SWITCH
ZPK Partition(s)
DAL1 IPOP
DAL2 IPOP
Columbus Datacenter (COL)
COL1 APOP
COL2 APOP
COL1 SWITCH
ZPK Partition(s)
(1)
COL2 SWITCH
ZPK Partition(s)
COL1 IPOP
COL2 IPOP
(3)
(2a,2d)
(2b,2c)
Client
(1) Process kicks off and Switch generates a new ZPK and outbound DKE message.
(2a) Outbound DKE is sent to all IPOPs where the client is conneted
(2b) IPOPs forward outbound DKE to client
(2c) IPOPs receive client response to DKE messages
(2d) Responses are forwarded from IPOPs to originating Switch
(3) Assuming all client responses are received and are successful, the originating Switch leverages the HA feature to replicate the key to all other Switch servers